MYCOTAXON

Volume 108, pp. 485–489 *April–June 2009*

A new species of *Arachnopeziza* from Taiwan

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Abstract — This paper describes and illustrates a new species, *Arachnopeziza hiemalis,* collected from Taiwan. It mainly differs from *A. aurelia* by its small apothecia and large ascospores.

Key words — discomycetes, *Helotiales*, *Hyaloscyphaceae*

Introduction

In Korf's monograph of *Arachnopezizeae, Arachnopeziza* Fuckel was delimited as apothecia seated on subiculum, with hyaline excipulum, straight hairs, and 1–7-septate ascospores. A total of twelve species were recognized in this genus (Korf 1952). Some new species were later added (Korf 1959, Batista et al 1960, Batista & Bezerra 1961, Dennis 1961, 1963, Korf & Zhuang 1985, Svrček 1988, Iturriaga & Korf 1988, Baral 1989, Engel 1993). Recently, Yu & Zhuang (2002) reported *A. colachna* from tropical China and Raitviir (2003) reported *A. groenlandica* with aseptate ascospores from Greenland. While investigating the fungal flora at Juiyenhsi Nature Reserve, Nantou, a species of *Arachnopeziza* was collected, which appears to differ from all known species of the genus. Description and illustration of this species are presented in this paper. Microscopic structures were studied under a light microscope with differential interference contrast lenses, and measurements were made from fresh materials in distilled water mounts. The specimens are deposited at the herbarium of National Museum of Natural Science, Taiwan (TNM).

Taxonomy

Arachnopeziza hiemalis Yei Z. Wang, **sp. nov.** Figs 1, 2

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Arachnopeziza aurelia *similis, sed in apothecis minoribus et ascosporis grandibus differt.*

Holotype: Taiwan, Nantou: Juiyenshi Nature Reserve, elev. 2400 m, on rotten wood of broadleaf tree, Dec. 13, 2006, coll. W. N. Chou, WAN 1141 (TNM F22011).

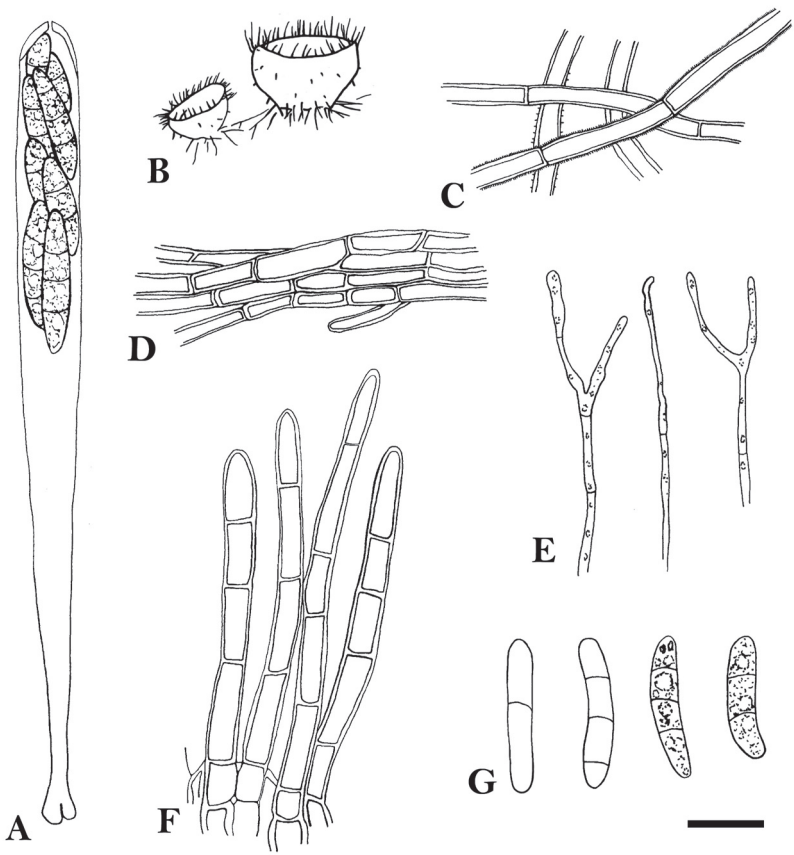

Fig. 1. *Arachnopeziza hiemalis*: A. An ascus. B. Apothecia. C. Hyphae of subiculum. D. A part of ectal-excipulum. E. Paraphysis apices. F. Hairs. G. Ascospores. Bar = 14 μm for A and C–G, 1 mm for B.

Etymology: Latinized form of winter, referring to the season when the specimens were collected.

Subiculum yellowish, scanty; hyphae 3–4 μm wide, smooth or roughened. Apothecia gregarious, globose at first, becoming cupulate to patellate, 0.5–1.5 mm wide, sessile, disc concave to flat, lemon yellow when fresh, turning to dark orange-yellow when dry; receptacle concolorous, surface covered by yellow hairs, bottom entangled with pale yellow mycelium. Margin elevated and usually inrolled on drying. Hairs arising from excipular cells, straight,

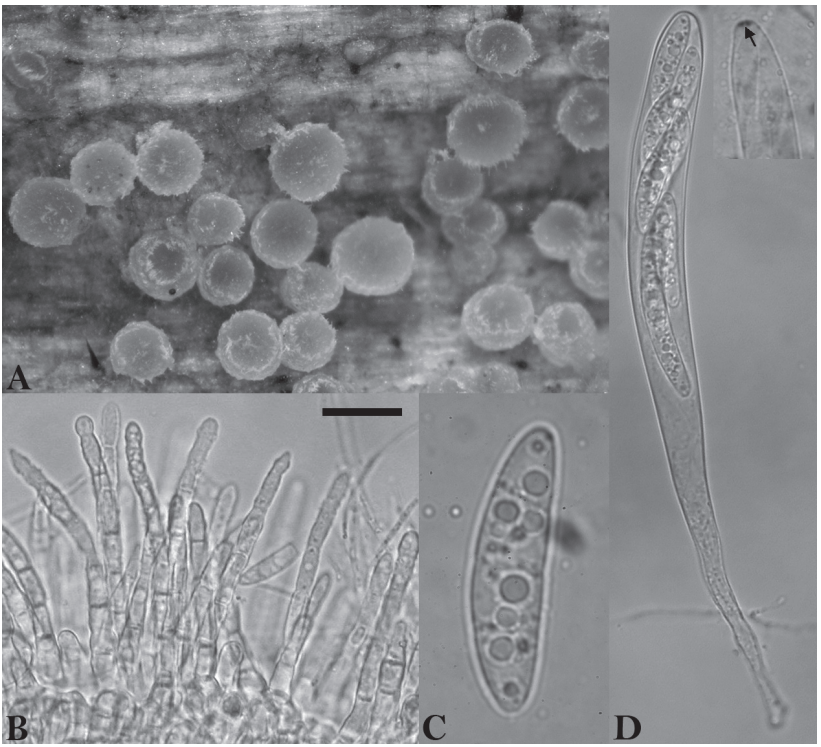

Fig. 2. *Arachnopeziza hiemalis*: A. Apothecia. B. Hairs. C. An ascospore. D. An ascus and an apical pore turning blue in Melzer's reagent (arrow).
Bar = 1.2 mm for A, 25 μm for B, 6 μm for C, and 15 μm for D.

yellow, cylindrical, slightly tapering at apex, smooth to finely granulate, 40–100 × 5–6 μm, mostly 4–5-septate, walls 0.2–0.8 μm in thickness. Ectal excipulum layer 50–100 μm thick, refractive, of *textura prismatica*, cells 10–20 × 3–5 μm, wall 0.5–1 μm in thickness, arranged at a low angle to the surface, cells extending to form marginal hairs. Medullary excipulum layer 50–70 μm thick, compactly arranged hyphae, 3–4 μm wide. Subhymenium not distinguishable. Hymenium yellow, 150–170 μm thick. Asci 8-spored, arising from croziers, cylindrical-clavate, 115–150 × 11–12 μm, apex rounded, apical pore turning blue in Melzer's reagent without KOH pretreatment and in IKI solution with KOH pretreatment. Ascospores ellipsoid, 20–28 × 4.5–5.5 μm, with 1–3 septa at maturity, straight to slightly curved, smooth, hyaline, multiguttulate, devoid of a gel sheath. Paraphyses filiform, tips simple or branched, 1–2 μm wide, septate, not protruding above the asci, filled with yellow-orange pigment granules.

Ascospores easily germinating on water agar. Colonies on MEA medium spreading very slowly. Mycelium brown, aerial hyphae scanty, margin irregular, reaching 1.2–2 cm diam. in 3 months at room temperature, then stopping growing, with brownish-red pigments. Hyphae yellow-brown, septate, 3–5 μm wide, wall 0.2–0.5 μm in thickness. Anamorph not observed.

Paratype specimens examined: Taiwan, Nantou: Juiyenhsi Nature Reserve, elev. 2400 m, on rotten wood, Jan. 22, 2005, coll. W. N. Chou, WAN1039, (TNM F22018). Juiyenshi Nature Reserve, elev. 2400 m, on rotten wood of broadleaf tree, Dec. 13, 2006, coll. W. N. Chou, WAN 1142 (TNM F20758)

This species is similar to *A. aurelia* (Pers.) Fuckel in its yellow-orange apothecia and 3-septate ascospores, but the latter has larger apothecia (0.5–3 mm), and smaller asci and ascospores (12.2–16.4 × 2.7–4.1 μm, Korf 1952; 12–20 × 3–5 μm, Dennis 1981). The hyaline gelatinous appendages or a bud-like protrusion each at the ends of ascospores as described by Korf (1952) and Huhtinen (1987) and illustrated by Boudier (1910) were not observed in this new species.

Arachnopeziza engelii Svrček, *A. obtusipila* Grelet and *A. ochracea* (Grelet & Croz.) Iturr. & Korf also have 3-septate ascospores. But *A. engelii* has cream to pink apothecia, and narrower ascospores (20–24 × 3.5–4.0 μm, Engel, 1993), *A. obtusipila* has white apothecia, shorter asci, and narrower ascospores as 2.7–3.4 μm wide (Korf 1951, 1952), and *A. ochracea* has beige apothecia, shorter asci and smaller ascospores (16.8–21.3 × 2.6–3.7 μm, Iturriaga & Korf 1988).

Acknowledgments

The author is grateful to Dr. W.-y. Zhuang and Dr. R.P. Korf for reviewing the manuscript and giving valuable suggestions, Mr. W. N. Chou for collecting specimens and writing the Latin description, Dr. Roland Kirschner for providing a reference, and Mr. C.H. Chang for preparing the figures. This study was partly supported by the grant 96-2621-B-178-003 from the National Science Council, Taiwan.

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